

# 1 Program 3dTsmooth

## 1.1 Purpose

Smooths each voxel time series in a 3D+time dataset and produces as output a new 3D+time dataset.

## 1.2 Usage

**3dTsmooth** [options] dataset

## 1.3 Options

General Options:

**-prefix ppp** = Sets the prefix of the output dataset to be 'ppp'.  
[default = 'smooth']

**-datum type** = Coerce the output data to be stored as the given type.  
[default = input data type]

The following options define the smoothing filter to be used. All filters in this program use 3 input points to compute one output point:

a = input value before the current point

b = input value at the current point

c = input value after the current point

[at the left end, a=b; at the right end, c=b]

**-lin** = 3 point linear filter:  $0.15*a + 0.70*b + 0.15*c$   
[This is the default smoother]

**-med** = 3 point median filter:  $\text{median}(a,b,c)$

**-osf** = 3 point order statistics filter:  
 $0.15*\min(a,b,c) + 0.70*\text{median}(a,b,c) + 0.15*\max(a,b,c)$

**-3lin m** = 3 point linear filter:  $0.5*(1-m)*a + m*b + 0.5*(1-m)*c$   
Here, 'm' is a number strictly between 0 and 1.